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DATE: February 18, 2021
TO: Jeff Gepper and Terri Harding, City of Eugene
FROM: Becky Hewitt, Tyler Bump, and Oscar Saucedo-Andrade
SUBJECT: Evaluation of Middle Housing Development Potential in Eugene

Executive Summary

About This Analysis

The City of Eugene is in the process of preparing Middle Housing Code Amendments to comply with Oregon House Bill 2001 (HB2001). In brief, as required by HB2001, these code amendments will allow middle housing—duplexes, triplexes, fourplexes, cottage clusters, and townhomes—in all residential zones that allow single family detached housing, at densities higher than those for single family housing and without restrictions that would create "unreasonable" cost or delay for middle housing development.

This analysis is intended to evaluate which middle housing types are most likely to be built under a range of lot size and market conditions and how development potential for middle housing varies throughout the City. **The analysis does not predict whether or when individual properties will be developed with middle housing; it identifies the prevalence of properties that could allow for middle housing development** based on buildable area and financial feasibility. It is focused on properties under an acre without known development restrictions in areas zoned for primarily single family housing, and relies on examples of middle housing that align with local context and the minimum requirements of HB2001; it does not test the impact of alternative development standards.

Key Findings

- Eugene has recent precedents of a variety of middle housing developments, and there appears to be continued demand for this type of housing.
- All middle housing types may be financially feasible in some circumstances. However, they are not equally financially feasible.
  - Townhomes are generally more financially feasible than plexes (rentals or with condominium ownership) when both are on the same size lots, and tend to be preferred by both builders and buyers. Townhomes are particularly likely on larger sites that can fit more than 4 units, but may be limited by lack of frontage on smaller lots.
  - Fourplexes tend to be more financially feasible than triplexes or duplexes because land costs and other fixed costs can be spread across more units.
  - Cottage clusters are less financially feasible than some other middle housing types but may appeal to buyers who prefer detached housing, which could make them more likely to be built than the financial results would suggest.

- Middle housing is feasible in all subareas, though some subareas have more development potential for middle housing than others. Most middle housing types are more financially feasible than new single family housing in the same subarea, making (re)development with middle housing possible in locations where new single family development is not likely today.
  - The Southeast, Southwest, Ferry Street Bridge, Central West and North Gilham subareas have the greatest number of tax lots that are financially feasible for middle housing development. Even in these areas, change is expected to be incremental.
  - In the Southeast and Southwest subareas, much of the development potential is on vacant land where single family development is also viable. In these situations, development is likely to include a mix of housing types.
  - Potential for redevelopment increases most in the North Gillham, Ferry Street Bridge, and Central West subareas, and, to a lesser extent, in the Southeast and Southwest subareas. However, redevelopment tends to occur incrementally as property comes up for sale. Further, not all properties where redevelopment is feasible will be redeveloped even when they do come up for sale, as there may be potential to achieve similar financial returns from remodeling the existing home in some cases, and there is (at least near-term) a limited number of developers with experience and interest in developing middle housing. (The analysis does not attempt to estimate returns for remodeling the existing housing stock, as this varies substantially based on the existing home's size, layout, and condition.)
  - Student-oriented duplexes, triplexes, and fourplexes may be financially feasible in areas close to the University with strong demand from students, though there are few lots in this area that are not already zoned for higher density development.
- New middle housing is comparatively less expensive than new single-family housing, because sales prices and rents tend to be lower for attached housing than for comparable detached housing, and some new single family housing is much larger and more luxury-oriented than even relatively high-end middle housing. (Expanding housing supply has also been shown to slow the escalation of housing prices broadly.) The difference relative to single family housing varies by location and housing type.
  - In lower-cost areas, new middle housing (to the extent it is financially feasible to develop) will generally be more expensive than the existing housing, but slightly less expensive than new detached housing in that area.
  - Middle housing in higher-cost areas will offer a greater savings relative to existing and new single family homes, more of which are larger, high-end homes in these areas.
  - The smallest middle housing units will offer the lowest prices/rents overall, though they are likely to be higher on a per-square-foot basis, and may be less financially feasible to develop.

Introduction

The City of Eugene is in the process of preparing Middle Housing Code Amendments to comply with Oregon House Bill 2001 (HB2001). In brief, as required by HB2001, these code amendments will allow middle housing—duplexes, triplexes, fourplexes, cottage clusters, and townhomes—in all residential zones that allow single family detached housing, at densities higher than those for single family housing and without restrictions that would create "unreasonable" cost or delay for middle housing development.

The City is currently considering options for the specific standards that will apply to middle housing. Analysis of the impacts of varying development regulations will be addressed through a separate, later evaluation as needed to inform decisions regarding those regulations. **This analysis is intended to evaluate which middle housing types are most likely to be built under a range of lot size and market conditions and how development potential for middle housing varies throughout the City.** This analysis is not intended to provide estimates of the absolute number of new housing units that could be built in a given area or within a specific time-period or to provide site-specific indications of where development is possible.

Overview of Approach and Assumptions

The analysis does not predict whether or when individual properties will be developed with middle housing; it identifies the prevalence of properties that could allow for middle housing development. This determination is based on 1) whether properties have sufficient buildable area for middle housing and 2) whether middle housing development (or redevelopment) would likely be financially feasible if the property came up for sale at its estimated market value. It does not indicate a timeline in which those properties with middle housing development potential might be developed, as this is based on decisions by individual property owners. It also does not specifically address the potential for existing homeowners to modify their property to convert it to middle housing, as this requires a more site-specific determination.

The analysis is based on current market conditions in Eugene, and accounts for variations in anticipated rents and sales prices for new middle housing based on the market conditions in different neighborhoods. For purposes of this analysis, some adjacent neighborhood associations were grouped into larger subareas where market conditions are relatively similar. These subareas are also used to summarize the results. See Exhibit 1 on page 5 for a map of the subareas used for this analysis.

This analysis focused on:

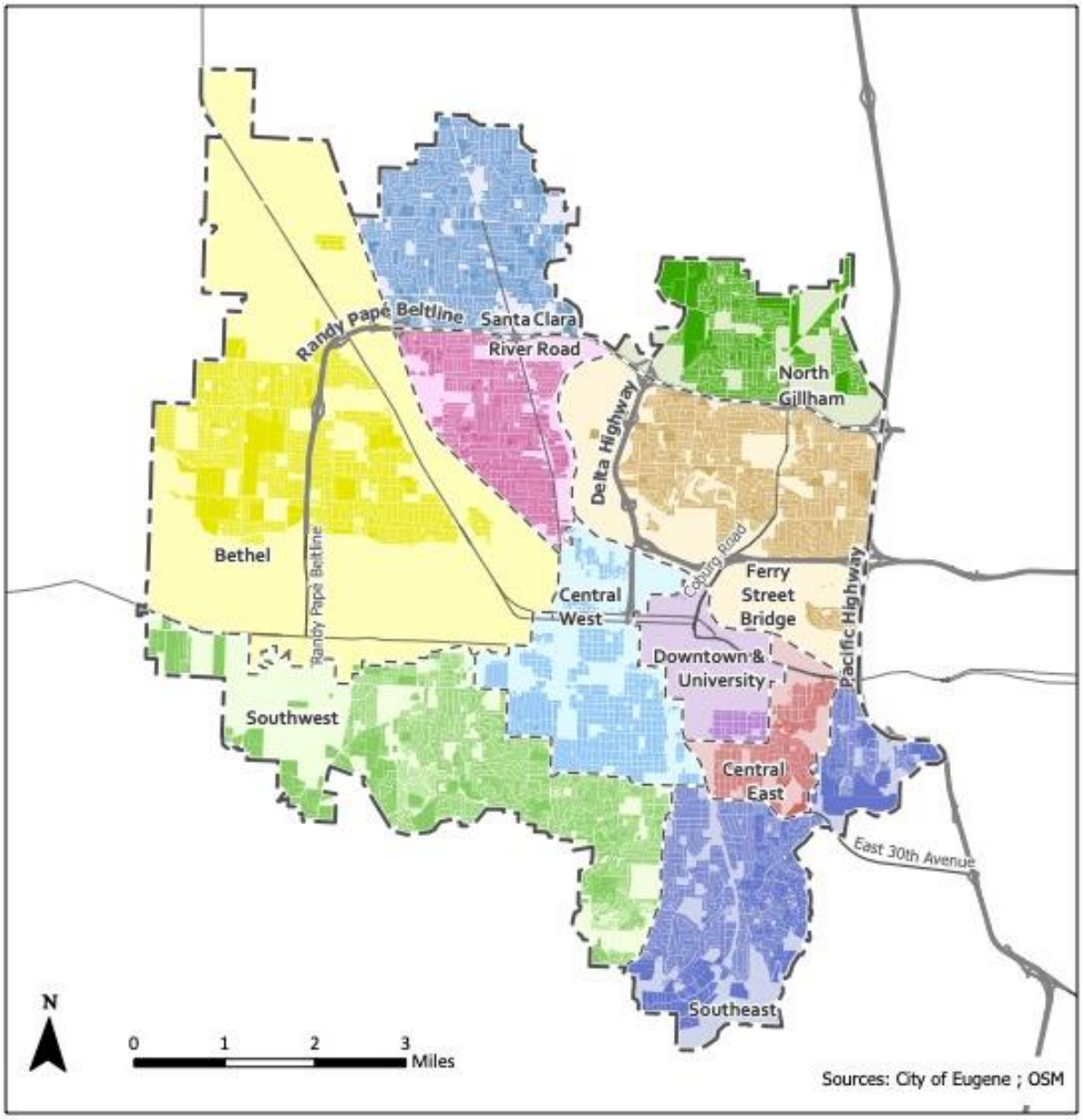
- **Areas zoned for primarily single family housing:** The analysis focused on the City's R-1 zone and a few special-area zones where middle housing types are generally not allowed under current regulations, or are allowed at a density equivalent to single family housing. In other residential zones, the changes to middle housing regulations will be more subtle, and understanding the impact of those changes would require a

more in-depth analysis. See Appendix A for a map of the areas and a list of the zones included.

- **Properties under an acre without known development restrictions:** Both vacant and developed properties were included, but the analysis excluded land committed to public facilities, most tax-exempt properties, and land developed as condominiums. Protected natural resources (based on mapping provided by the City) were assumed to be unbuildable. Lots over an acre were excluded as these may develop with a mix of housing types and require a more complex analysis. Existing private Contracts, Covenants, and Restrictions (CC&Rs) were not considered, as the City does not have comprehensive documentation of where CC&Rs may restrict development of middle housing. See Appendix A for a map of the properties included and details of the protected areas excluded.
- **Examples of middle housing that align with local context and the minimum requirements of HB2001:** The middle housing "prototypes" used for analysis were informed by recently built and proposed housing development in Eugene. They align with the basic standards required for minimum compliance with HB2001, including:
  - Allowing duplexes on any size lot that allows single family housing
  - Allowing triplexes on lots as small as 5,000 square feet; fourplexes on lots as small as 7,000 square feet; and cottage clusters on lots as small as 7,000 square feet
  - Allowing townhomes at a density of 25 units per acre
  - Requiring no more than one parking space per unit

More detail regarding the assumptions underlying this analysis is provided in Appendix A.

Exhibit 1: Residential Areas Used for Analysis



Urban Growth Boundary - - - Subarea Boundaries

Residential Land Base

- Bethel
- Central East
- Central West
- Downtown & University
- Ferry Street Bridge
- North Gillham
- River Road
- Santa Clara
- Southeast
- Southwest

Subareas

- Bethel
- Central East
- Central West
- Downtown & University
- Ferry Street Bridge
- North Gillham
- River Road
- Santa Clara
- Southeast
- Southwest

Source: City of Eugene, OSM, ECONorthwest

Analysis Results

What might middle housing look like in Eugene?

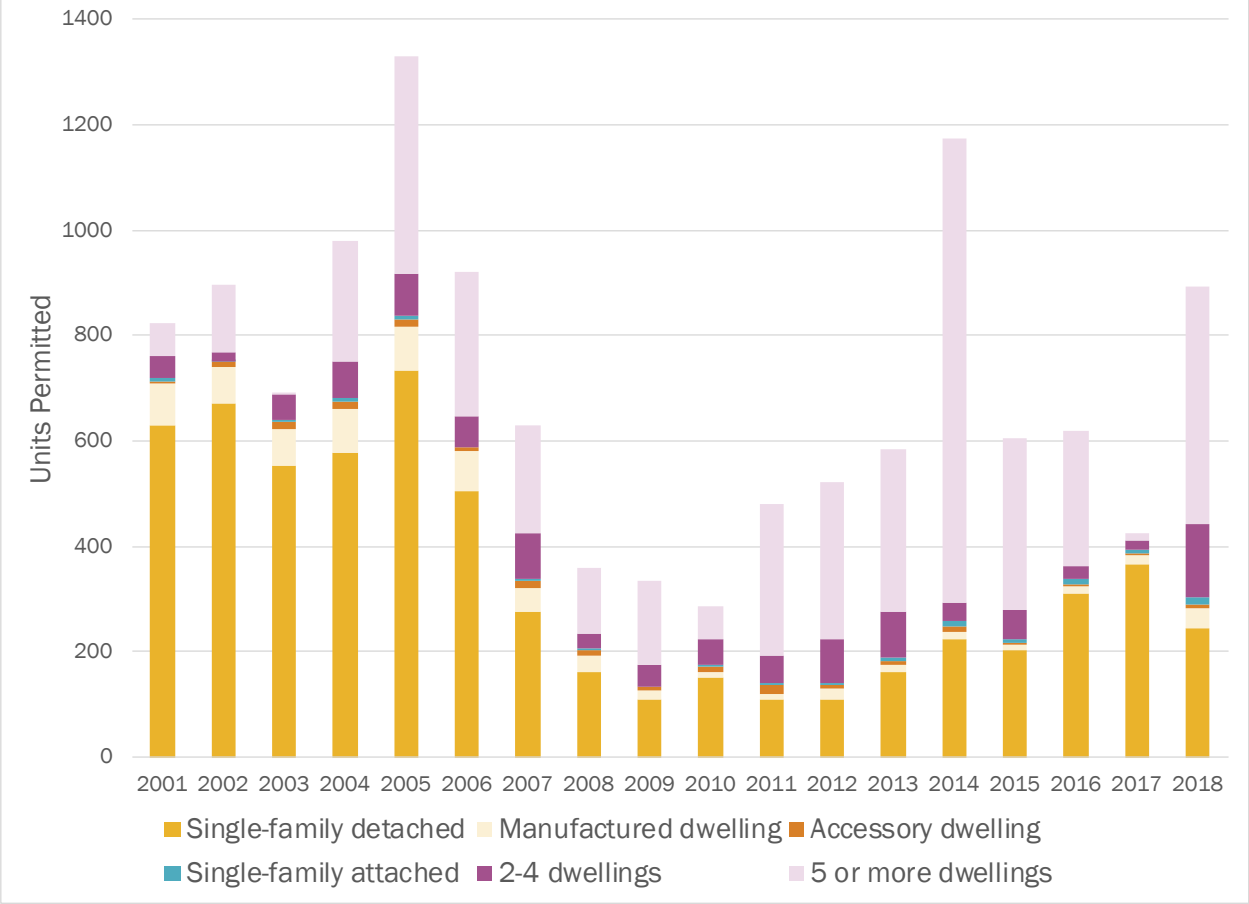
Unlike some other communities in Oregon, Eugene has recent examples of middle housing development, including townhouses, duplex, triplexes, fourplexes, and cottage clusters. These examples have largely been for-sale housing, but a few have been rental.

Exhibit 2: Examples of Eugene Middle Housing Development

Source: City of Eugene staff

There appears to be demand for and interest in such housing in Eugene, though there have been relatively few middle housing developments per year compared to the number of single family homes developed, as shown in Exhibit 3. According to data compiled by the City, permits for single-family attached housing and 2-4 dwellings averaged roughly 65 units per year between 2014 and 2018, while single family detached housing has averaged roughly 210 units permitted per year during that period.

Exhibit 3: Residential Building Permits by Housing Type, 2001-2018



Source: ECONorthwest analysis of City of Eugene data

How much might middle housing cost in Eugene?

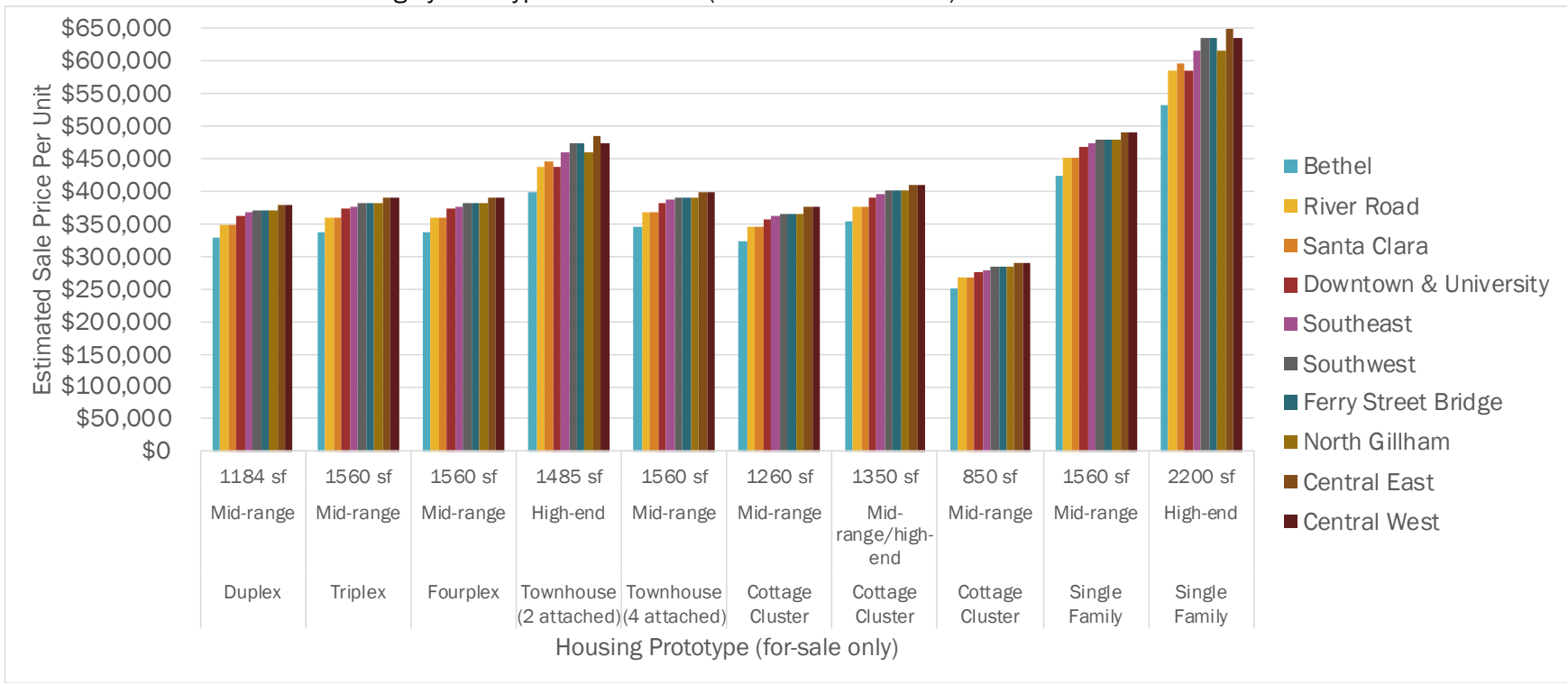
Estimated pricing for new middle housing is based on observed examples from Eugene to the extent possible. Estimated sales prices for ownership housing range from $230,000 to $485,000 per unit and from $1,500 to $2,900 per month for rental housing. By comparison, new single family detached housing has sold for between $250,000 and over $1,000,000 in Eugene in the past year, while newer single family rental housing typically rents for $1,700 to $3,000. Sales prices and rents tend to be lower for attached housing than for comparable detached housing, and some new single family housing is much larger and more luxury-oriented than even relatively high-end middle housing.

Estimated sales prices and rents vary by housing type based on unit size, finish quality, attached vs. detached, condominium vs. fee simple ownership (for sale pricing). They also vary geographically by subarea based on observed home prices. Estimated rents for student-oriented units are based on current rentals of similar units in areas adjacent to the University. Rents for other housing types are estimated based on rent for apartments and homes and are assumed to vary geographically in ways that reflect a mix of demand linked to University students, faculty, and staff as well as demand that is similar to that from homebuyers. (See Appendix A for details.)

Note that these sale prices and rents are not necessarily high enough to make development feasible in all cases.

For larger, high-end single-family homes, prices in more expensive subareas will be much higher than in lower-cost areas. However, for smaller mid-range middle housing units, we anticipate less price variation across different areas. This means that middle housing in higher-cost areas will offer a greater savings relative to the price of new single-family homes, and may be more affordable than the median value of existing homes in the area. In lower-cost areas, if new middle housing is feasible, it may be more expensive than the existing median home value, but will likely still be priced slightly lower than new detached housing in that area. However, the lower sales prices in those areas are also less likely to translate into redevelopment potential (see next sections).

Exhibit 4: Estimated For-Sale Pricing by Prototype and Subarea (for New Construction)



Source: ECONorthwest

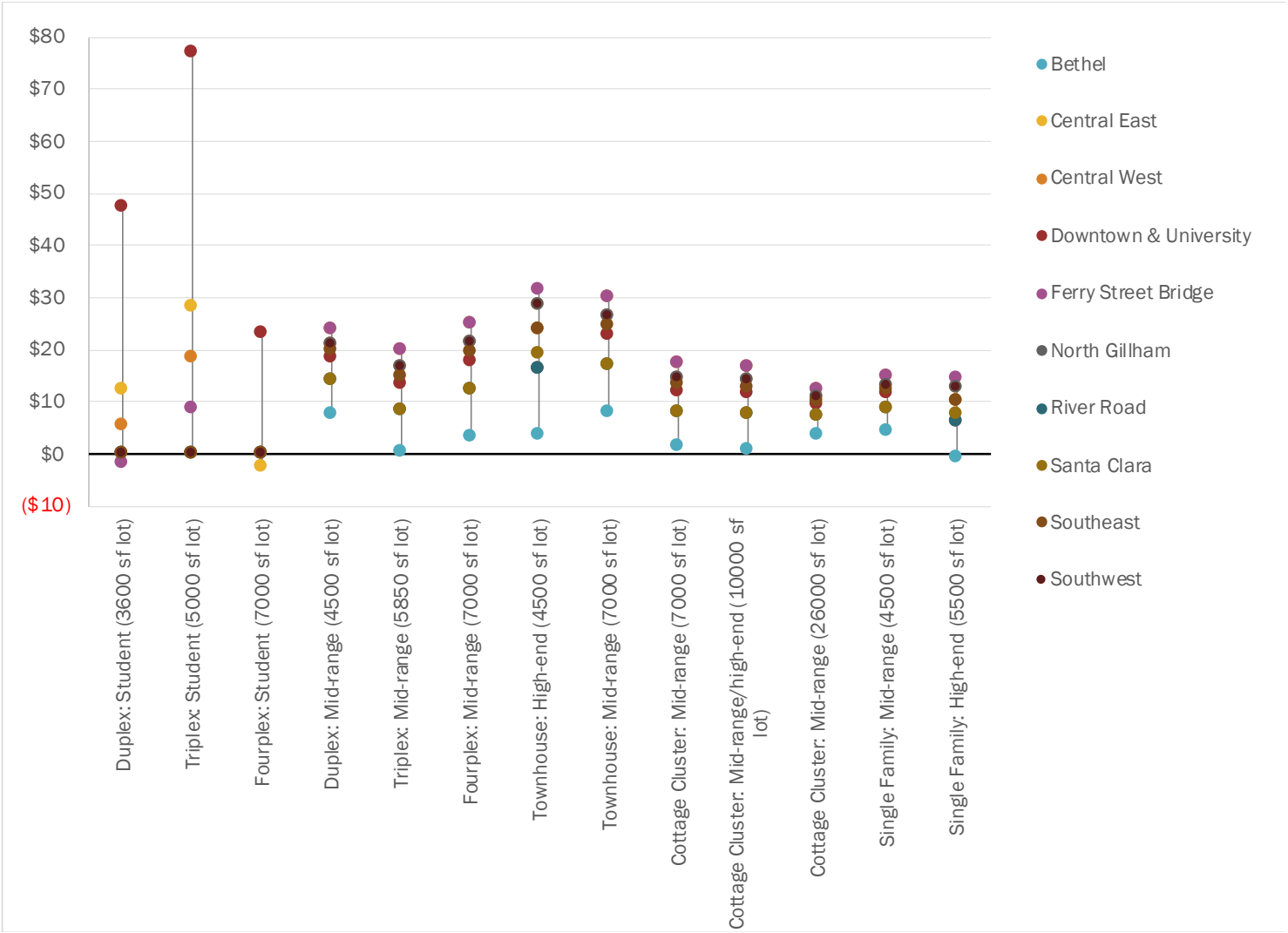
Exhibit 5: Estimated Rents by Prototype and Subarea (for New Construction)

Source: ECONorthwest

Which middle housing types are most likely to be feasible to develop?

Our analysis uses Residual Land Value (RLV) to evaluate financial feasibility. RLV is a measure of what a developer is able to pay for land, given expected construction, operating costs, and revenue. In other words, it is the budget that developers have remaining for land after all other development constraints have been accounted for. It can be used for both for-sale and rental housing, accounting for the different financial requirements for each. Aside from the student-oriented prototypes, each was tested for financial feasibility as rental or for-sale housing. The estimated RLV for each of the prototypes in each subarea is shown in Exhibit 6—dots connected by vertical lines show how the RLV varies by subarea for a given prototype. The RLV shown in Exhibit 6 shows whichever is higher for a given prototype between rental and for-sale.

Exhibit 6: Estimated Residual Land Value by Housing Type and Subarea[1]



Source: ECONorthwest

[1] Assumes developed property in City limits, with the optimal lot size for each prototype.

Based on this analysis, it appears that:

- Many of the middle housing types can achieve residual land values that are higher than those estimated for new single family housing in the same subarea, potentially making (re)development financially feasible where it would not be otherwise.
- Student-oriented duplexes, triplexes, and fourplexes with two to four bedrooms and shared kitchens are a possibility in areas close to the University with strong demand from students. Larger units (e.g., 4-bed/4-bath units) are the most financially feasible because they minimize the costs of kitchens and maximize rents (which tend to be set per bedroom rather than per unit).
- Among the prototypes that are not targeted to students, fourplexes tend to be more financially feasible than triplexes or duplexes (on lots that are large enough) because land costs and other fixed costs can be spread across more units.
- Townhomes are generally more financially feasible than plexes (with condominium ownership) when both are on the same size lots. However, if townhomes require a shared driveway to access garages located behind the unit (rather than individual front driveways or access from an existing alley), this makes them less efficient and may make them less feasible compared to plexes because they may need a larger lot for the same size and number of units.
- While many of the prototypes are potentially feasible as rental or as ownership, typically the ownership development generates a higher residual land value.
- On larger sites, the most likely middle housing type is townhomes. While it is possible for developers to create subdivisions with plexes, it is more likely that they would develop townhomes or single-family subdivisions instead, because of the complexity of going through both a land division and a condominium process, and because rental plexes are less financially feasible than townhomes.

There are other considerations that influence which housing types are more likely to be built as well.

Builders and buyers generally prefer "fee simple" ownership (in which the buyer owns the structure and the land) over condominiums (in which the buyer generally owns the unit itself but not the land, and sometimes not the exterior of the building). For the builder, this is largely due to construction defect liability law in Oregon, which allows condominium associations to hold developers liable for issues with the building (e.g., water intrusion) for up to 10 years, and which has been the source of many lawsuits. For homebuyers, condominiums can offer a lower purchase price, but higher on-going costs for condominium association dues, which can reduce their buying power. This will tend to make townhouses more likely to get built, all else equal. However, townhouses and fee-simple ownership require frontage for all the units on a street, which may not be possible in all cases; building new roads to provide frontage is costly. Thus, for lots with adequate frontage, townhouses may be the most likely outcome, even if the expected financial returns for plexes are similar.

How does development potential for middle housing vary geographically?

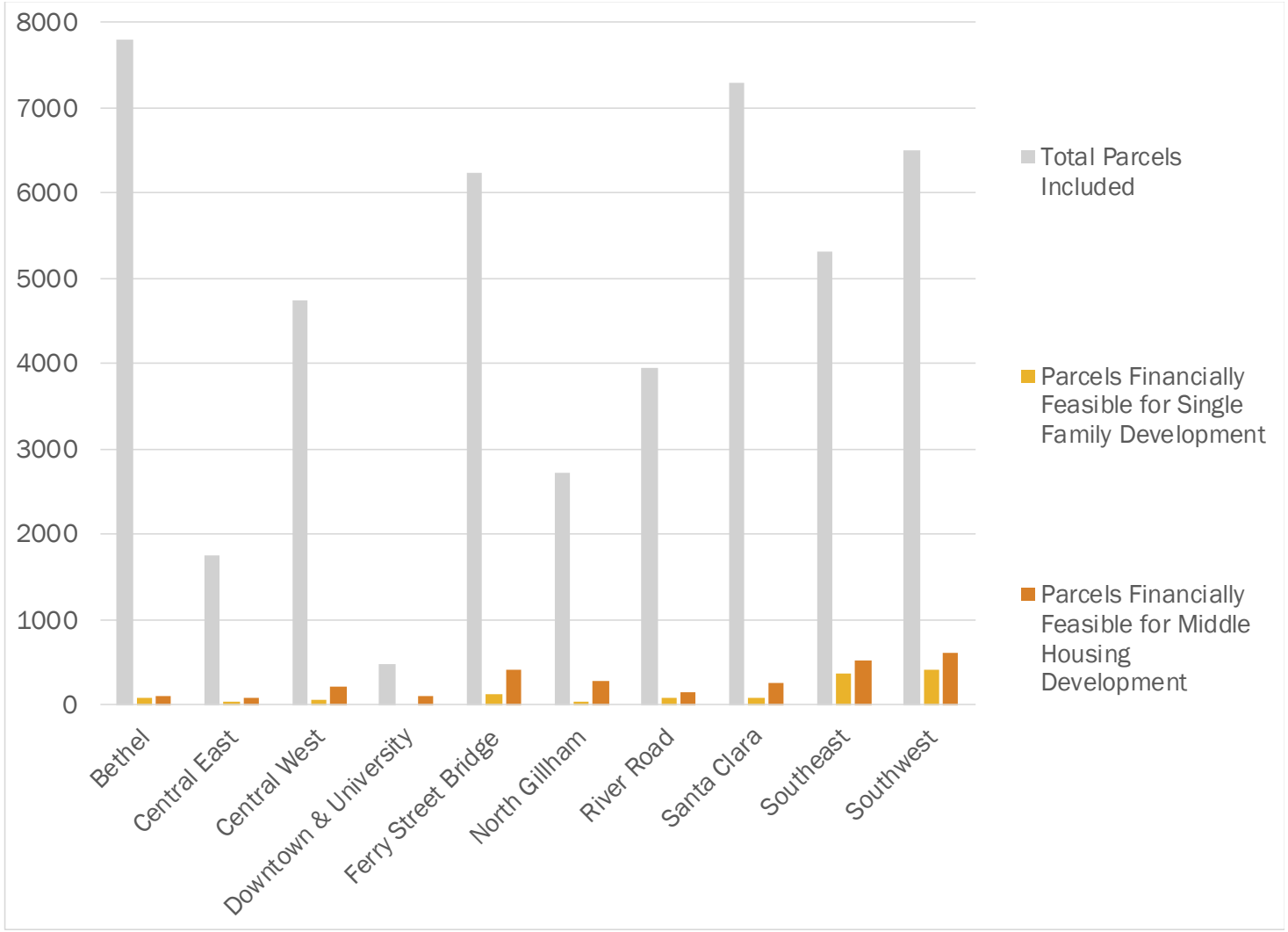
The financial viability of middle housing varies across the different subareas of the City mostly due to differences in sales prices/rents, though there are also some differences in costs (e.g., annexation costs), as documented in Appendix A. In Exhibit 6, the range of residual land values (vertically) for a given prototype across different subareas gives a sense of how much impact differences in market conditions have on financial feasibility. However, because the cost of land / value of existing properties also varies geographically, the fact that a developer could afford to pay more for property in one area does not necessarily mean that middle housing is more likely there, if the increase is not enough to make up for higher land costs / property values in that area.

Our analysis next compared RLV to estimated property value for all properties included in the analysis, accounting for demolition costs on developed sites and annexation/zone change costs on sites outside City limits. If the RLV exceeded the estimated property value, we assume development is financially feasible (as noted above, this is not the same as saying it will occur, just that it could occur based on our assumptions).

The following charts and tables show how financially feasible development varies by subarea.

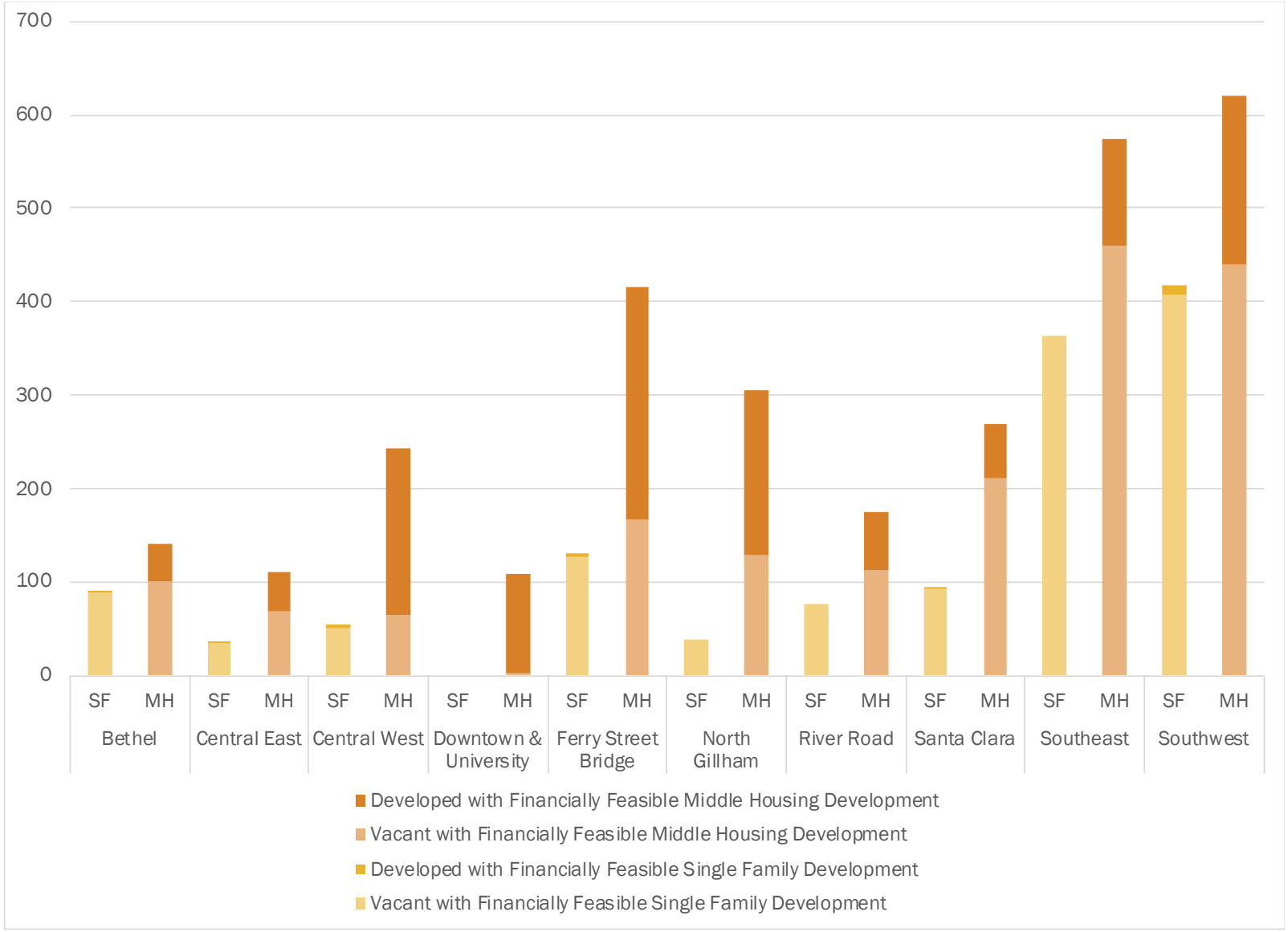
- Exhibit 7 shows the total number of parcels with financially feasible middle housing development, compared to the total number of parcels included in the analysis and the number with financially feasible single family development.
- Exhibit 8 provides additional detail of the parcels with financially feasible single family and middle housing development, showing how many are vacant vs. developed in each subarea.
- Exhibit 9 shows which prototypes were feasible most broadly for (re)development in each subarea.
- Exhibit 10 shows the estimated number of taxlots with financially feasible (re)development for each housing type and each subarea.

Exhibit 7: Total Parcels, Parcels with Financially Feasible Middle Housing Development, and Parcels with Financially Feasible Single Family Development by Subarea



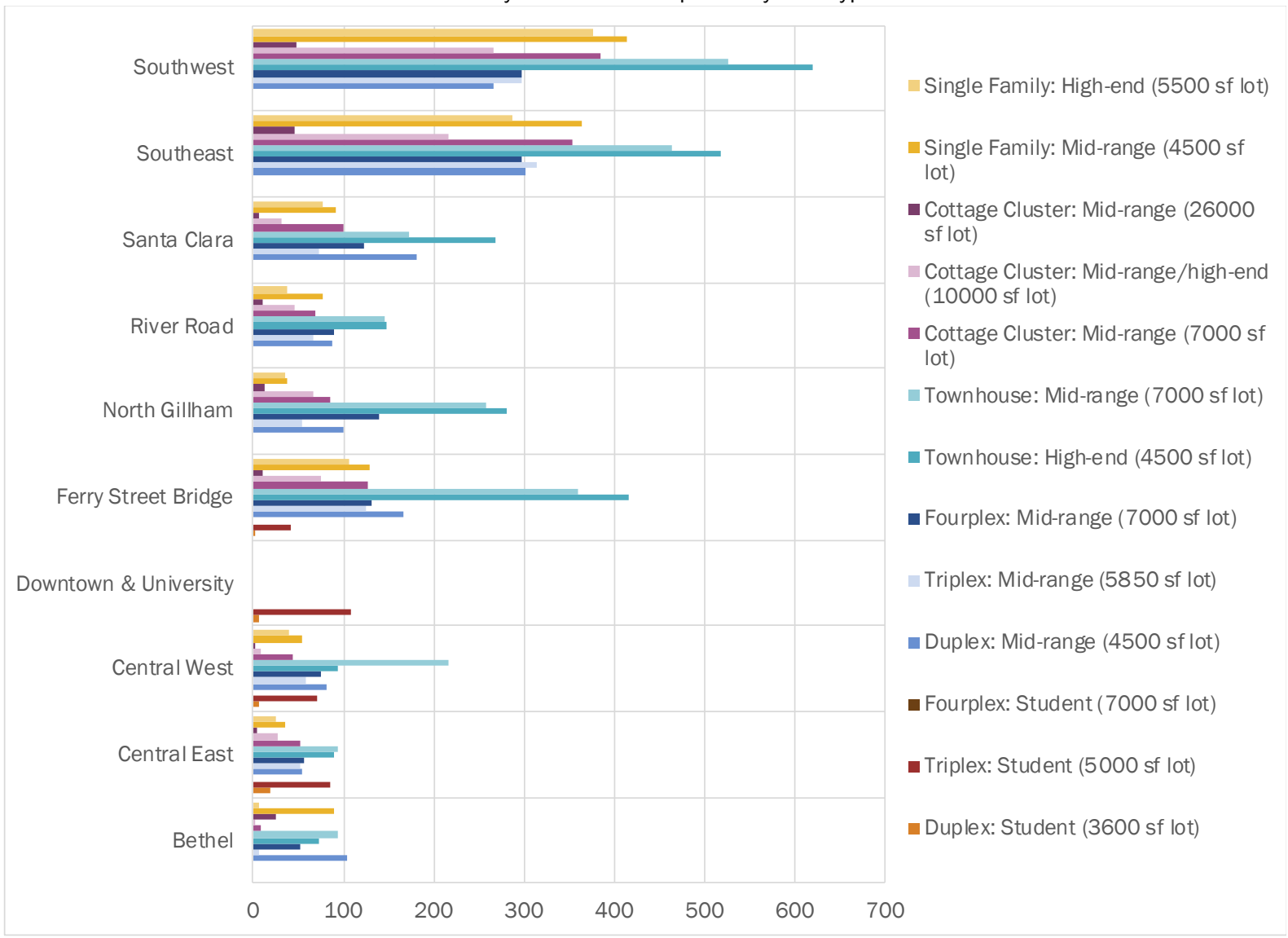
Source: ECONorthwest

Exhibit 8: Financially Feasible Middle Housing and Single Family Development on Vacant and Developed Lots by Subarea



Source: ECONorthwest

Exhibit 9: Total Number of Tax Lots with Financially Feasible Development by Prototype and Subarea



Source: ECONorthwest

Exhibit 10: Estimated Number of Taxlots with Financially Feasible Development by Prototype and Subarea

		Bethel	Central East	Central West	Dntn & Univ.	Ferry St. Br.	North Gillham	River Road	Santa Clara	SE	SW
	Total Taxlots Included	7,808	1,751	4,742	479	6,248	2,727	3,964	7,286	5,318	6,512
Taxlots with Financially Feasible Development by Prototype	Duplex: Student (3600 sf lot)	0	19	7	6	3	0	0	0	0	0
	Triplex: Student (5000 sf lot)	0	85	71	108	42	0	0	0	0	0
	Fourplex: Student (7000 sf lot)	0	0	0	0	0	0	0	0	0	0
	Duplex: Mid-range (4500 sf lot)	104	54	81	0	167	99	87	180	302	266
	Triplex: Mid-range (5850 sf lot)	6	51	59	0	124	55	66	72	313	297
	Fourplex: Mid-range (7000 sf lot)	52	56	74	0	130	139	89	122	297	298
	Townhouse: High-end (4500 sf lot)	72	89	94	0	415	281	147	269	518	620
	Townhouse: Mid-range (7000 sf lot)	94	94	216	0	360	258	146	172	464	525
	Cottage Cluster: Mid-range (7000 sf lot)	9	53	44	0	127	85	69	99	354	385
	Cottage Cluster: Mid-range/high-end (10000 sf lot)	1	27	8	0	74	67	46	32	217	266
	Cottage Cluster: Mid-range (26000 sf lot)	25	4	1	0	11	12	11	6	45	47
	Single Family: Mid-range (4500 sf lot)	89	35	55	0	129	38	76	92	363	414
	Single Family: High-end (5500 sf lot)	6	25	40	0	106	36	38	76	286	376

Source: ECONorthwest

Our analysis shows that:

- Middle housing is feasible in all subareas, though some subareas have more development potential for middle housing than others.
- Overall, the Southeast, Southwest, Ferry Street Bridge, Central West and North Gilham subareas have the greatest number of tax lots that are financially feasible for middle housing development.
- In the Southeast and Southwest subareas, much of the development potential is on vacant land where single family development is also viable. Even though middle housing achieves a higher residual land value than single family detached development in these areas, they are likely to develop with a mix of single family and middle housing for other reasons, such as prior land use approvals or developer familiarity. In addition, the analysis does not fully account for the increased costs of building on sloped lots, which could reduce the amount of financially feasible development in these areas.
- In subareas like River Road and Santa Clara, where many properties are not annexed, the cost of annexation (and requirement to be adjacent to the current City limits) will remain a barrier to development. However, the higher RLV of middle housing makes (re)development financially feasible on more properties that are outside City limits compared to single family detached housing, if they are or become eligible to annex.
- In the North Gillham, Ferry Street Bridge, and Central West subareas (and, to a lesser extent, in the Southeast and Southwest subareas), the higher RLV of middle housing (particularly townhomes) makes redevelopment financially feasible on more developed properties. However, in the North Gillham and Ferry Street Bridge subareas these results may be skewed somewhat by high sales prices in certain high-amenity locations that may not be realistic in other parts of the same subarea.
- In Bethel, which has relatively low expected prices and rents but also relatively low existing home prices, little development appears to be financially feasible under current conditions. However, in areas like this, sensitivity testing on pricing indicates that if market conditions shift such that new development can achieve prices closer to those in other parts of the City, the amount of financially feasible development could increase substantially, as there are many low-cost properties that could become feasible for (re)development.

Conclusion

Implementing middle housing code amendments will expand development potential for middle housing. However, infill and redevelopment tend to occur incrementally as property comes up for sale. Further, not all properties where redevelopment is feasible will be redeveloped even when they do come up for sale, as there may be potential to achieve similar financial returns from remodeling the existing home in some cases, and there is (at least near-

term) a limited number of developers with experience and interest in developing middle housing.[2]

While (re)development will take place incrementally over time, the amount of financially-feasible middle housing development could, with time, meaningfully expand housing options in existing neighborhoods. The City should consider the relative feasibility of different housing types in different areas in drafting code amendments to ensure that middle housing is viable in all subareas and that the expected development outcomes meet local housing goals.

The next step for the City is to consider how code and incentives can shape outcomes for middle housing, including identifying ways to increase the likelihood of middle housing construction.

[2] The analysis does not attempt to estimate returns for remodeling the existing housing stock, as this varies substantially based on the existing home's size, layout, and condition.

Appendix A: Documentation of Assumptions

This appendix provides a summary of the financial assumptions used in our pro forma feasibility analysis.

For each middle housing prototype, we evaluated whether a developer could pay at least estimated market value for land after all revenues, costs, and the respective financial return metric were accounted for. This methodology is called a residual land value (RLV) analysis. RLV is a measure of what a developer is able to pay for land, given expected construction, operating costs, and revenue. In other words, it is the budget that developers have remaining for land after all the other development constraints have been accounted for. It is a useful metric for assessing how code changes and potential development incentives interact to impact development feasibility.

We compare the RLV to the estimated value of the property in its current state based on the Real Market Value (RMV) from the tax assessor. This data is not highly accurate, since it does not directly set the basis for property taxes; however, it is a useful indicator of approximate property value, and is the best available source of information at a parcel level at this scale.

For sites that are large enough to fit the prototype one to two times, we calculated whether the total RLV for the prototype exceeded the estimated value of the property. While we considered only sites under one acre (since larger sites are more likely to develop with a mix of housing types and are less appropriate to evaluate through this approach), we assumed sites more than twice the minimum lot size for the prototype could divide to accommodate multiple "copies" of the prototype. We deducted 20% of gross site area for future streets to provide access within the development, and used RLV per square foot of buildable land to determine whether development would be financially feasible. We also divided the existing RMV by the buildable area of the parcel (after excluding protected natural resource areas) to determine the estimated acquisition cost per buildable square foot of land. See Exhibit 13 on page 9 for a map of estimated property value per buildable square foot.

Development Costs

Development costs include hard costs (cost of labor and materials for construction) and soft costs (fees, design, permitting, and other non-construction costs).

Hard costs for construction of the housing account for variations in unit size, finish quality (e.g., entry-level vs. luxury), and variations in how much spaces like bedrooms and kitchens cost compared to other finished space in a unit. Other hard costs include the cost of garages, driveways and off-street parking, and exterior landscaping. Hard costs also account for demolition costs if a property is currently developed and for the cost of adding local street access on larger properties.

Costs tend to be higher for development on steep slopes; however, the cost increase (for more complex structural and/or geotechnical analysis, more expensive foundations, retaining walls, etc.) varies depending on slope and soil conditions. Without detailed data about these slope and soil conditions, we have not estimated the cost impacts of slopes on development feasibility. However, areas with slopes over 30% were excluded from the analysis as unbuildable.

Soft costs include:

- System development charges (SDCs) and permit fees that vary by housing type based on current fee estimators from the City of Eugene
- Design costs such as architectural plans and engineering fees
- Carrying costs for the duration of the development
- Utility hook up costs
- Legal and survey costs to establish a condominium or for land division, where applicable (note that although condominiums require higher legal and survey costs, the costs for land division are similar when the carrying cost of the additional time required for land divisions is factored in)
- Annexation and zone change costs (City fees plus consultant costs to prepare applications) and additional carrying costs for properties that are outside City limits

In total, estimated development costs (excluding land) per unit range from $156,000 to $324,000 for the middle housing types.

Revenue

Estimated sales prices and rents vary by housing type based on unit size, finish quality, attached vs. detached, condominium vs. fee simple ownership (for sale pricing). They also vary geographically by subarea.

- Estimated sales prices for each of the prototypes are based on observations of sales transactions for recent middle housing development in Eugene. Geographic variations between subareas are based on a combination of the Zillow Home Value Index for the neighborhoods within each subarea and observations of sales prices for newer three- to four-bedroom homes in each area (where available).
- Rents for each prototype were based on the few available observations for middle housing rentals or for the most comparable rental housing for which data was available. Geographic variations are based on a combination of the average observed rents per square foot for two-bedroom apartments in each area and the adjustment applied to for-sale housing in the same area (since many of the prototypes are larger units that may appeal more to larger households than those who would rent a two-bedroom apartment).

- Estimated rents for student-oriented units are based on current rentals of similar units in areas adjacent to the University.

For rental housing we've made standard assumptions about vacancy and operating costs. On for-sale housing, we've assumed standard sales commissions.

Return Requirements

Financial feasibility on for-sale housing is based on standard profit expectations for home builders. For rental housing, we assume a required ratio between on-going net operating income (NOI) and estimated loan payments (debt service on a long-term loan) based on typical lending requirements.

Mapping and Zoning

We selected lots with residential Plan Designations that are in the following zones and special areas:

- Low-Density (R-1)
- Agricultural zoning
- Elmira Road, Jefferson Westside, and Walnut Station Special Areas
- Chambers Special Area in a sub-area classification of Low-Density Residential ("LDR" & "R-1")

See Exhibit 11 on page 7 for a map of these areas. Some of the included zones allow other housing types and/or non-residential uses to some extent; this analysis does not evaluate development potential for these other allowed uses.

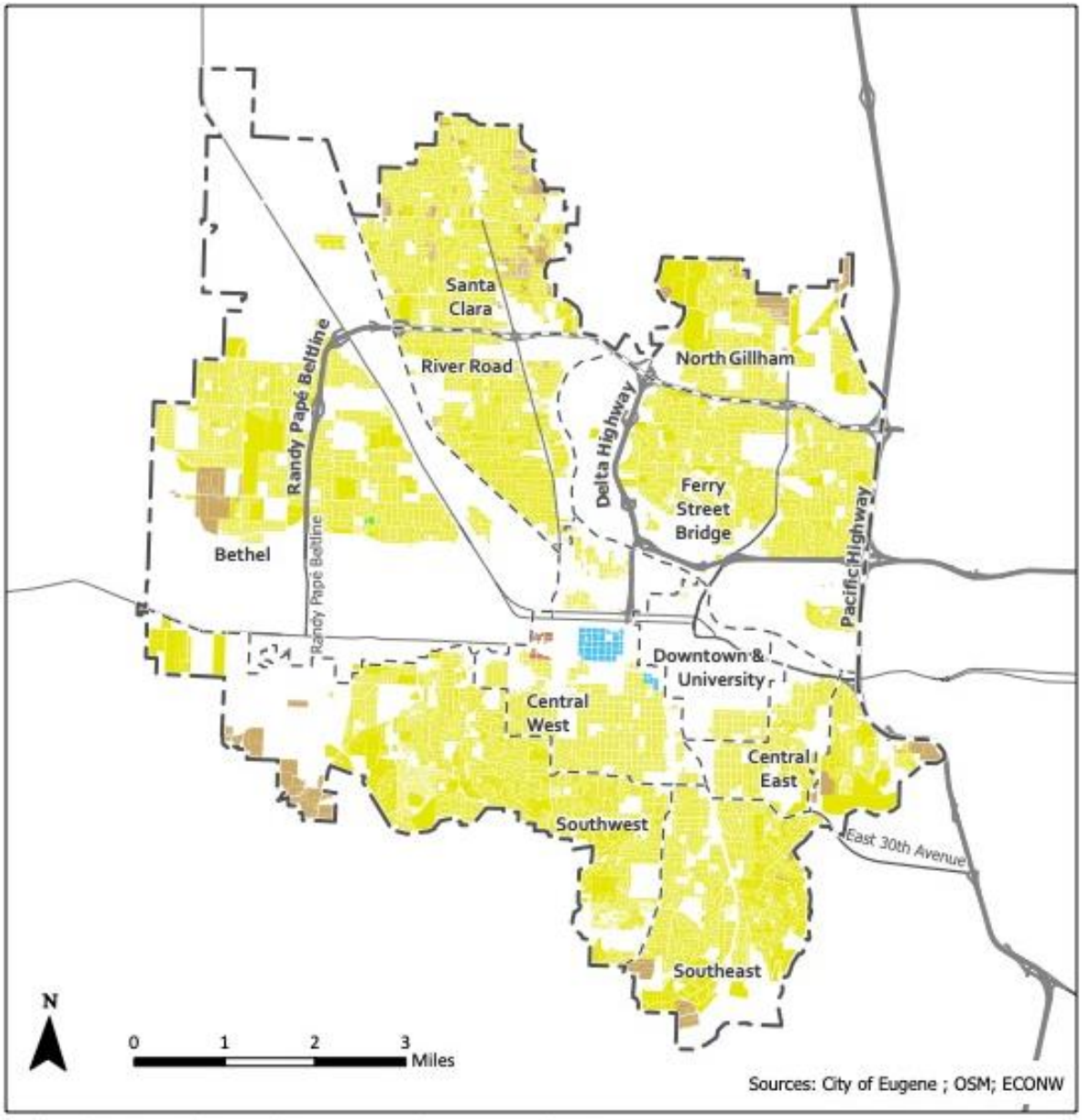
We then excluded:

- **Committed lands:** According to the City's documentation, lands classified as committed include the following: Government Property (e.g. city, county, state, and federal), Parks (city, county, and state), school district property (e.g. 4J and Bethel), transportation rights-of-way (e.g. streets and rail), cemeteries, and Bonneville Power Administration (BPA) easements.
- **Protected natural resource areas:** According to the City's documentation, lands classified as protected include the following: Federal Emergency Management (FEMA) Floodway areas, Eugene's Adopted Goal 5 Riparian Corridors, Eugene's Adopted Goal 5 Wetlands, Eugene's Adopted Goal 5 Upland Wildlife Habitat areas, Eugene's Adopted Goal 6 Water Quality Protection areas, historic and cultural resources, Natural Resource (NR) zoned areas, Federally listed threatened and endangered species habitat, and slopes of 30% or greater.
- **Lots over an acre** were excluded as these may develop with a mix of housing types and require a more complex analysis.

See Exhibit 12 on page 8 for a map of buildable and unbuildable areas.

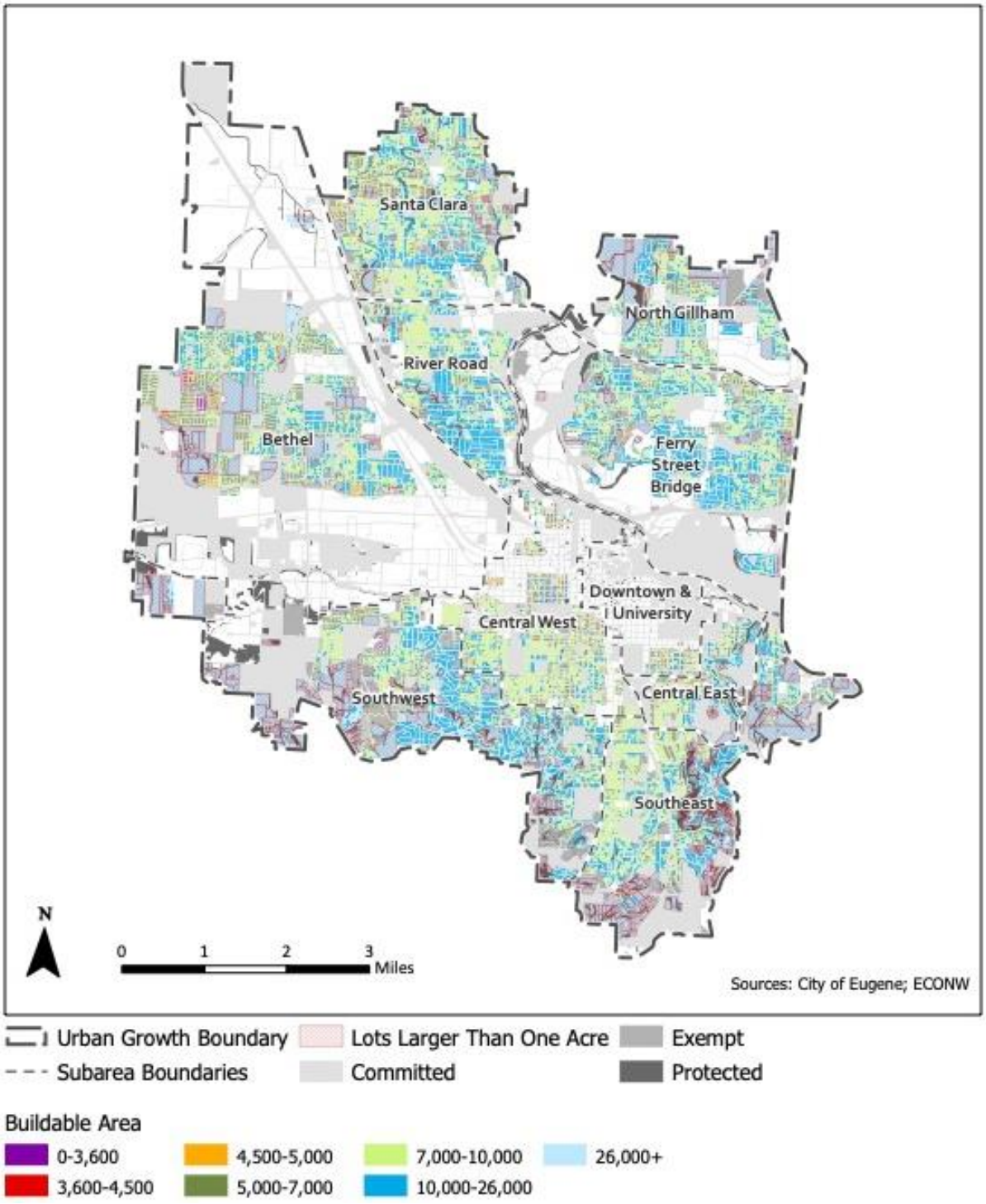
For the remaining properties, we used property type codes indicating "improved" or "structure" (e.g., manufactured structures) to indicate if a property was developed or vacant.

Exhibit 11: Residential Zones Analyzed for Middle Housing Development



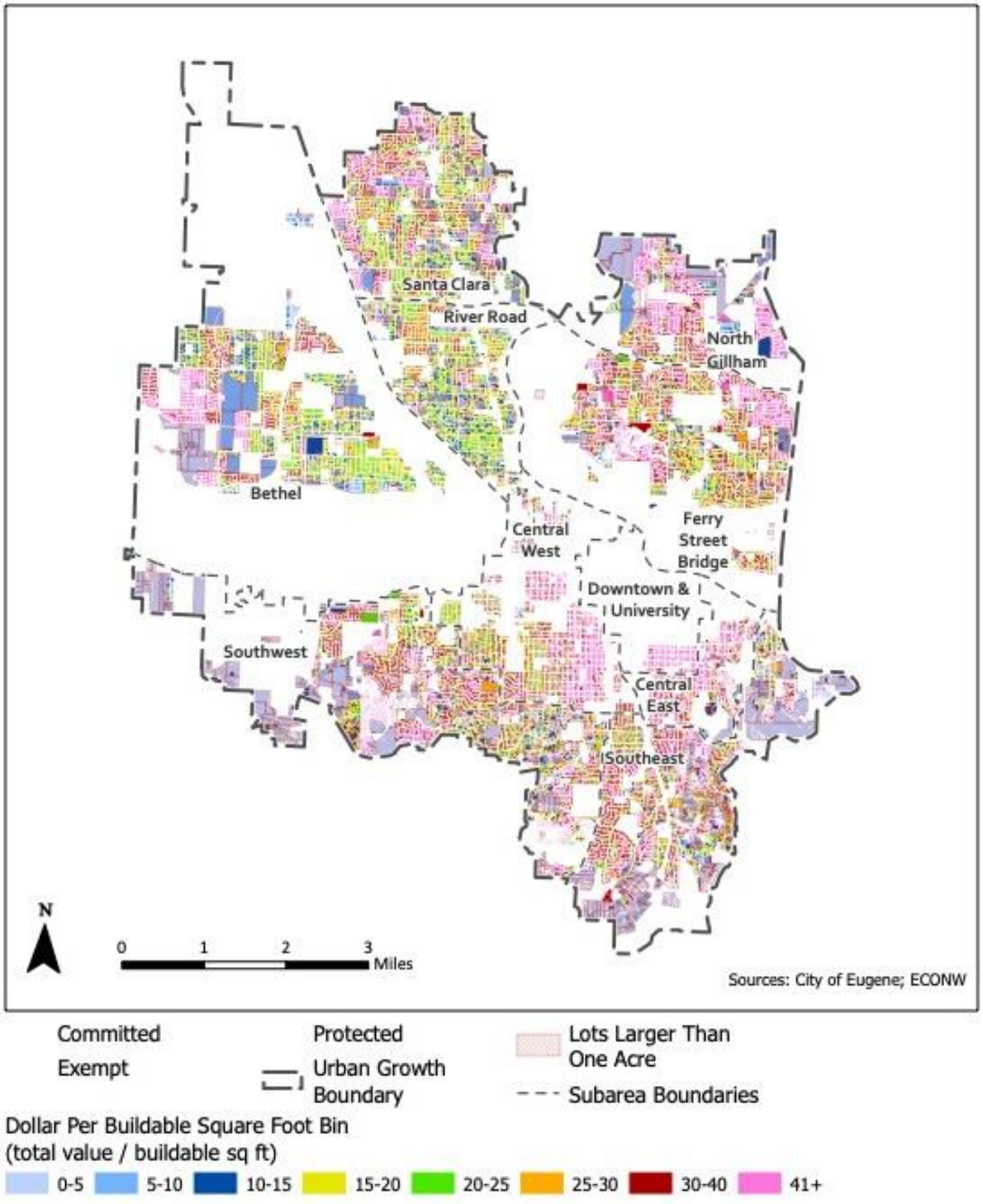
Source: City of Eugene, OSM, ECONorthwest

Exhibit 12: Constrained and Buildable Lots / Property



Source: City of Eugene, OSM, ECONorthwest

Exhibit 13: Estimated Market Value (Per Square Foot) of Buildable Land



Source: City of Eugene, OSM, ECONorthwest